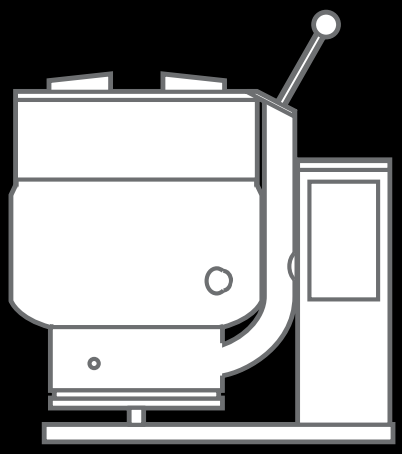
OPERATOR/SERVICE MANUAL

IMPORTANT INFORMATION, KEEP FOR OPERATOR

This manual provides information for:

TDB/6 Domestic
STEAM JACKETED KETTLE

- Self Contained
- Electrically Heated
- Table Top Mounted
- Tilting



THIS MANUAL MUST BE RETAINED FOR FUTURE REFERENCE. READ, UNDERSTAND AND FOLLOW THE INSTRUCTIONS AND WARNINGS CONTAINED IN THIS MANUAL.

WARNING
Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

NOTIFY CARRIER OF DAMAGE AT ONCE

It is the responsibility of the consignee to inspect the container upon receipt of same and to determine the possibility of any damage, including concealed damage. Unified Brands suggests that if you are suspicious of damage to make a notation on the delivery receipt. It will be the responsibility of the consignee to file a claim with the carrier. We recommend that you do so at once.

Manufacture Service/Questions 888-994-7636.

Information contained in this document is known to be current and accurate at the time of printing/creation. Unified Brands recommends referencing our product line websites, unifiedbrands.net, for the most updated product information and specifications.

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PART NUMBER 148732, REV. E (9/09)

IMPORTANT — READ FIRST — IMPORTANT

CAUTION: BE SURE ALL OPERATORS READ, UNDERSTAND AND FOLLOW THE OPERATING INSTRUCTIONS, CAUTIONS, AND SAFETY INSTRUCTIONS CONTAINED IN THIS MANUAL.

WARNING: THIS UNIT IS INTENDED FOR USE IN THE COMMERCIAL HEATING, COOKING AND HOLDING OF WATER AND FOOD PRODUCTS, PER THE INSTRUCTIONS CONTAINED IN THIS MANUAL. ANY OTHER USE COULD RESULT IN SERIOUS PERSONAL INJURY OR DAMAGE TO THE EQUIPMENT AND WILL VOID WARRANTY.

WARNING: KETTLE MUST BE INSTALLED BY PERSONNEL QUALIFIED TO WORK WITH ELECTRICITY. IMPROPER INSTALLATION CAN RESULT IN INJURY TO PERSONNEL AND/OR DAMAGE TO EQUIPMENT.

DANGER: ELECTRICALLY GROUND THE UNIT AT THE TERMINAL PROVIDED. FAILURE TO GROUND UNIT COULD RESULT IN ELECTROCUTION AND DEATH.

WARNING: AVOID ALL DIRECT CONTACT WITH HOT EQUIPMENT SURFACES. DIRECT SKIN CONTACT COULD RESULT IN SEVERE BURNS.

WARNING: AVOID ALL DIRECT CONTACT WITH HOT FOOD OR WATER IN THE KETTLE. DIRECT CONTACT COULD RESULT IN SEVERE BURNS.

CAUTION: DO NOT OVER FILL THE KETTLE WHEN COOKING, HOLDING OR CLEANING. KEEP LIQUIDS A MINIMUM OF 2-3" (5-8 cm) BELOW THE KETTLE BODY RIM TO ALLOW CLEARANCE FOR STIRRING, BOILING AND SAFE PRODUCT TRANSFER.

WARNING: TAKE SPECIAL CARE TO AVOID CONTACT WITH HOT KETTLE BODY OR HOT PRODUCT WHEN ADDING INGREDIENTS, STIRRING OR TRANSFERRING PRODUCT TO ANOTHER CONTAINER.

WARNING: WHEN TILTING KETTLE FOR PRODUCT TRANSFER:

1) WEAR PROTECTIVE OVEN MITT AND PROTECTIVE APRON.
2) USE CONTAINER DEEP ENOUGH TO CONTAIN AND MINIMIZE PRODUCT SPLASHING.
3) PLACE CONTAINER ON STABLE, FLAT SURFACE, AS CLOSE TO KETTLE AS POSSIBLE.
4) STAND TO LEFT OR RIGHT SIDE OF KETTLE (DEPENDING ON TILTING HANDLE PLACEMENT) WHILE POURING . DO NOT STAND DIRECTLY IN POUR PATH OF HOT CONTENTS.
5) POUR SLOWLY, MAINTAIN CONTROL OF KETTLE BODY HANDLE AT ALL TIMES, AND RETURN KETTLE BODY TO UPRIGHT POSITION AFTER CONTAINER IS FILLED OR TRANSFER IS COMPLETE.
6) DO NOT OVER FILL CONTAINER. AVOID DIRECT SKIN CONTACT WITH HOT CONTAINER AND ITS CONTENTS.

CAUTION: KEEP FLOORS IN FRONT OF KETTLE WORK AREA CLEAN AND DRY. IF SPILLS OCCUR, CLEAN IMMEDIATELY, TO AVOID SLIPS OR FALLS.

WARNING: FAILURE TO CHECK SAFETY VALVE OPERATION PERIODICALLY COULD RESULT IN PERSONAL INJURY AND/OR DAMAGE TO EQUIPMENT.

WARNING: WHEN TESTING, AVOID ANY EXPOSURE TO THE STEAM BLOWING OUT OF THE SAFETY VALVE. DIRECT CONTACT COULD RESULT IN SEVERE BURNS.

WARNING: TO AVOID INJURY, READ AND FOLLOW ALL PRECAUTIONS STATED ON THE LABEL OF THE WATER TREATMENT COMPOUND.

WARNING: BEFORE REPLACING ANY PARTS, DISCONNECT THE UNIT FROM THE ELECTRIC POWER SUPPLY.

IMPORTANT READ FIRST IMPORTANT

WARNING: **KEEP WATER AND SOLUTIONS OUT OF CONTROLS AND ELECTRICAL EQUIPMENT. NEVER SPRAY OR HOSE THE SUPPORT HOUSING OR ELECTRICAL CONNECTIONS.**

CAUTION: **MOST CLEANERS ARE HARMFUL TO THE SKIN, EYES, MUCOUS MEMBRANES AND CLOTHING. PRECAUTIONS SHOULD BE TAKEN. WEAR RUBBER GLOVES, GOGGLES OR FACE SHIELD AND PROTECTIVE CLOTHING. CAREFULLY READ THE WARNINGS AND FOLLOW THE DIRECTIONS ON THE LABEL OF THE CLEANER TO BE USED.**

CAUTION: **USE OF ANY REPLACEMENT PARTS OTHER THAN THOSE SUPPLIED BY GROEN OR THEIR AUTHORIZED DISTRIBUTORS CAN CAUSE OPERATOR INJURY AND DAMAGE TO THE EQUIPMENT, AND WILL VOID ALL WARRANTIES.**

IMPORTANT: **SERVICE PERFORMED BY OTHER THAN FACTORY AUTHORIZED PERSONNEL WILL VOID WARRANTIES.**

WARNING: **DO NOT HEAT AN EMPTY KETTLE. EXCESSIVE STEAM PRESSURE COULD DEVELOP.**

Table of Contents

IMPORTANT OPERATOR WARNINGS 2

EQUIPMENT DESCRIPTION 4

INSPECTION AND UNPACKING 5

INSTALLATION 5

INITIAL START-UP 6

OPERATION 7

SEQUENCE OF OPERATION 9

CLEANING 10

MAINTENANCE 12

TROUBLESHOOTING 14

PARTS LIST 15

WIRING DIAGRAM 18

REFERENCES 19

SERVICE LOG 20

WARRANTY 21

Equipment Description

The Groen TDB/6 is a table top, tilting, steam jacketed kettle with a thermostatically controlled, self-contained, electrically-heated steam supply and appropriate controls, mounted on a sturdy base.

The body of the TDB/6 Kettle is constructed of stainless steel, welded into one solid piece. The kettle is furnished with a reinforced rim and a butterfly shaped pouring lip. It has a steam jacket rated for working pressures up to 50 PSI. Kettle finish is 180 emery grit on the inside and bright semi-deluxe on the outside. A tilt handle allows the operator to manually tilt the kettle body in a controlled manner. Pouring height accepts pans up to 4 inches high on the table top.

A built-in steam generator, sized for the kettle capacity and heated by electricity, delivers steam into the jacket. “Airless” operation of the steam jacket permits uniform, efficient heating at temperatures as low as 150°F and as high as 295°F. In addition to the adjustable thermostat for operating control, the unit has a tilt cut-off switch, low water control, safety valve, and pressure switch as safety features. A heating indicator light, pressure gauge, and sight glass are provided for monitoring kettle operation.

A single electrical connection is required for installation. The unit employs single phase 208 or 240 volt power.

KETTLE CHARACTERISTICS		
	U.S.	Metric
Kettle Capacity	10 Quarts	9.4 Liters
Jacket Capacity	1 Quart	0.9 Liter
Diameter	12 inches	30.5 cm
Depth	9 Inches	23 cm.
KW at 208 V Single Phase	3.3 KW, 16 Amperes	
KW at 240 V Single Phase	4.0 KW, 17 Amperes	
Base Width	19 inches	48.3 cm
Base Depth	9¼ inches	23.5 cm

Accessory equipment includes:

1. Lift-off cover
2. Basket insert
3. TS/9 Stand, which holds a pan for filling (see illustration at right)
4. Faucets

TDB/6 mounted on optional TS/9S stand.

Inspection and Unpacking

The unit will arrive in a heavy shipping carton and will be attached to a skid. Immediately upon receipt, inspect the carton carefully for exterior damage.

CAUTION
SHIPPING STRAPS ARE UNDER TENSION AND CAN SNAP BACK WHEN CUT. TAKE CARE TO AVOID PERSONAL INJURY OR DAMAGE TO THE UNIT BY STAPLES LEFT IN THE WALLS OF THE CARTON.

Carefully cut the polyester straps around the carton and detach the sides of the box from the skid. Pull the carton up off the unit.

Thoroughly inspect the unit for concealed damage. Report any shipping damage or incorrect shipments to the delivery agent.

Write down the model number, serial number, and installation date, and file this information for future reference. Space for these entries is provided at the top of the Service Log at the back of this manual.

CAUTION
THIS UNIT WEIGHS 50 LB. (23 KG) INSTALLER SHOULD OBTAIN HELP AS NEEDED TO LIFT THIS WEIGHT SAFELY.

When installation is to begin, carefully cut the straps which hold the unit on the skid. Lift the unit straight up off the skid. Examine packing materials to be sure loose parts are not discarded with the materials.

Attach the tilt handle (normally shipped inside the kettle) by carefully threading it into the socket on the trunnion support. Be careful to avoid cross-threading fine socket threads.

Installation

The Groen Kettle is provided with complete internal wiring. It is ready for immediate connection. A wiring diagram is provided in this manual and on the inside of the control housing service panel.

3. Bringing the electrical service through the entrance at the rear of the support housing, making a watertight connection with the incoming lines. (A BX connection is **not** recommended.)

WARNING
INSTALLATION OF THE KETTLE MUST BE DONE BY PERSONNEL QUALIFIED TO WORK WITH ELECTRICITY.

IMPROPER INSTALLATION CAN RESULT IN INJURY TO PERSONNEL AND/OR DAMAGE TO EQUIPMENT.

The completed unit has been operated at the factory to test all controls and heater elements.

1. Set the kettle in place and level it. The base must be securely fastened to a table or work surface. Installation under a ventilation hood is recommended.
2. Provide electrical power as specified on the electrical information plate attached to the equipment. Observe local codes and/or The National Electrical Code in accordance with ANSI/NFPA 70 - (current edition).

DANGER
ELECTRICALLY GROUND THE UNIT AT THE TERMINAL PROVIDED. FAILURE TO GROUND UNIT COULD RESULT IN ELECTROCUTION AND DEATH.

KETTLE MUST BE BOLTED DOWN BEFORE USE. (REMOVE WARNING LABEL AFTER INSTALLATION.)

4. Apply a small bead of silicone caulk around the perimeter of the kettle base.
5. Confirm that the jacket water level is between the marks on the gauge glass. If the level is low, follow the instructions under “Jacket Filling and Water Treatment” in the “Maintenance” section of this manual.
6. The open end of the elbow on the outlet of the safety valve must be directed downward. If it is not, turn the elbow to the correct position.
7. Any mechanical or electrical change must be approved by the Groen Food Service Engineering Department.

Initial Start-Up

IMPORTANT
BE SURE OPERATORS READ, UNDERSTAND AND FOLLOW THE OPERATING INSTRUCTIONS, CAUTIONS AND SAFETY INSTRUCTIONS CONTAINED IN THIS MANUAL.

Now that the kettle has been installed, you should test it to ensure that the unit is operating correctly.

1. Remove all literature and packing materials from inside and outside of the unit.
2. Turn on the electrical service to the unit.
3. Pour 1-2 quarts of water into the kettle.
4. Following "To Start Kettle" instructions in the "Operation" section of this manual, begin heating the water at the highest thermostat setting. The heating indicator light should come on immediately, and heating should continue until the water boils.

WARNING
AVOID ALL DIRECT CONTACT WITH HOT SURFACES. DIRECT SKIN CONTACT COULD RESULT IN SEVERE BURNS.

AVOID ALL DIRECT CONTACT WITH HOT FOOD OR WATER IN THE KETTLE. DIRECT CONTACT COULD RESULT IN SEVERE BURNS.

5. To shut down the unit, turn the thermostat dial to "OFF".

If the unit functions as described above, it is ready for use. If the unit does not function as intended, contact your local Groen Certified Service Agency.

A simple turn of the thermostat controls the Groen TDB/6 Kettle.

WARNING

AVOID ALL CONTACT WITH HOT SURFACES. DIRECT SKIN CONTACT COULD RESULT IN SEVERE BURNS.

AVOID ALL DIRECT CONTACT WITH HOT FOOD OR WATER IN THE KETTLE. DIRECT CONTACT COULD RESULT IN SEVERE BURNS.

TAKE SPECIAL CARE TO AVOID CONTACT WITH HOT KETTLE BODY OR HOT PRODUCT, WHEN ADDING INGREDIENTS, STIRRING OR TRANSFERRING PRODUCT TO ANOTHER CONTAINER.

CAUTION

DO NOT OVERFILL THE KETTLE WHEN COOKING, HOLDING OR CLEANING. KEEP LIQUIDS AT LEAST 2-3" (5-8 cm) BELOW THE KETTLE BODY RIM TO ALLOW CLEARANCE FOR STIRRING, BOILING PRODUCT AND SAFE TRANSFER.

WARNING

WHEN TILTING KETTLE FOR PRODUCT TRANSFER:

3) WEAR PROTECTIVE OVEN MITT AND PROTECTIVE APRON.
2) USE CONTAINER DEEP ENOUGH TO CONTAIN AND MINIMIZE PRODUCT SPLASHING.
3) PLACE CONTAINER ON STABLE, FLAT SURFACE, AS CLOSE TO KETTLE AS POSSIBLE.
4) STAND TO LEFT OR RIGHT SIDE OF KETTLE (DEPENDING ON TILTING HANDLE PLACEMENT) WHILE POURING — NOT DIRECTLY IN POUR PATH OF HOT CONTENTS.
5) POUR SLOWLY, MAINTAIN CONTROL OF KETTLE BODY HANDLE AT ALL TIMES, AND RETURN KETTLE BODY TO UPRIGHT POSITION AFTER CONTAINER IS FILLED OR TRANSFER IS COMPLETE.
6) DO NOT OVERFILL CONTAINER. AVOID DIRECT SKIN CONTACT WITH HOT CONTAINER AND ITS CONTENTS.

The operator controls kettle heating with the thermostat dial. The dial turns heating element electric power on or off and sets the operating temperature of the kettle.

A. To Start Kettle

1. EVERY DAY make sure that the jacket water level is between the marks on the gauge glass. If the level is below the lower mark, see "Jacket Filling and Water Treatment" on page 13 of this manual.

2. Check the pressure gauge. If the gauge does not show 20 to 30 inches of vacuum (that is, a reading of 20 to 30 below 0), see "Jacket Vacuum" on page 12 of this manual.

3. Turn on the electrical power to the unit, the contactor will energize and the Indicator Light will illuminate.

4. Turn the thermostat dial to the desired temperature setting. The kettle will then heat to that set point temperature.

B. To Transfer Product or Empty Kettle:

The kettle is designed and manufactured to be tilted in a controlled manner. Grasp the insulated plastic ball firmly. Maintain a firm grip on handle when tilting, while keeping kettle body in a tilted position and when SLOWLY returning the kettle body to an upright position.

CAUTION
KEEP FLOORS IN FRONT OF THE KETTLE AREA CLEAN AND DRY. CLEAN SPILLS AT ONCE TO AVOID SLIPS OR FALLS.

C. To Shut Down Kettle

1. Turn the thermostat dial to "OFF".

2. For prolonged shut-down, or before cleaning the outside of the unit, shut off the power supply to the unit

D. Use of Common Accessories

1. Lift Off Cover.

As with stock pot cooking, an optional lift off cover can speed heating of water and food products. It helps retain heat in the cooking vessel and reduces the heat and humidity released into the kitchen. Use of a cover can reduce some product cook times and help maintain the temperature, color and texture of products being held or simmered for extended periods.

Make sure plastic ball handle is secure on the lift off cover before using. ALWAYS use the plastic handle to place or remove the cover from the kettle. Wear protective oven mitts and a protective apron.

When putting the cover on the kettle, position it on top of kettle rim, with its flat edge facing the pouring lip.

WARNING
AVOID ALL DIRECT CONTACT WITH HOT SURFACES. DIRECT SKIN CONTACT COULD RESULT IN SEVERE BURNS.

AVOID ALL DIRECT CONTACT WITH HOT FOOD OR WATER IN THE KETTLE. DIRECT CONTACT COULD RESULT IN SEVERE BURNS.

When removing cover:

a) Firmly grasp the plastic handle

b) Lift rear edge (farthest from operator) 1-2" (3-5 cm) to allow any steam and water vapor to escape the cooking vessel. Wait 2-3 seconds.

c) Tilt cover to 45-60° angle and allow any hot condensate or product to roll off cover back into kettle.

d) Remove the cover, ensuring that any remaining hot condensate or product does not drip on operator, floor or work surfaces.

e) Place cover on safe, flat, sanitary, out-of-the-way surface, or return to kettle rim.

CAUTION
DO NOT TILT KETTLE BODY WITH COVER IN PLACE. COVER MAY SLIDE OFF, CAUSING INJURY TO OPERATOR.

2. Basket Insert

An optional kettle basket insert can assist in cooking boiled products, including eggs, potatoes, vegetables, shellfish, pasta and rice. The nylon mesh liner must be used when cooking products smaller than the mesh size of the basket, (approximately ¼" (6 mm) such as rice and small pasta shapes.

Tips For Use.

a) Allow for water displacement of basket and product. This may mean only filling the kettle half full of water. Test basket and product displacement with the kettle OFF, and with cold water in the kettle.

CAUTION
DO NOT OVERFILL THE KETTLE WHEN COOKING, HOLDING OR CLEANING. KEEP LIQUIDS 2-3" (5-8 cm) BELOW THE KETTLE BODY RIM TO ALLOW CLEARANCE FOR STIRRING, BOILING AND SAFE PRODUCT TRANSFER.

b) Load basket on a level, stable work surface.

c) Lift the loaded basket with both hands. Get help from another person if the basket is too heavy for safe handling

d) Slowly lower product into kettle.

WARNING
AVOID ALL DIRECT CONTACT WITH HOT SURFACES. DIRECT SKIN CONTACT COULD RESULT IN SEVERE BURNS.

WARNING
AVOID ALL DIRECT CONTACT WITH HOT FOOD OR WATER IN THE KETTLE. DIRECT CONTACT COULD RESULT IN SEVERE BURNS.

e) When removing basket with cooked product, lift basket straight up, so the bottom of the basket clears the rim and pouring lip. Wear protective oven mitts and a protective apron.

f) Allow hot water to fully drain from product, before moving the basket away from the kettle. Do not rest kettle basket on the kettle rim or pouring lip. If basket is too heavy, get help from another person. Remove product immediately from the basket into another container, being sure to avoid contact with hot product and hot basket or . . .

g) Place basket with food on stable, flat surface, setting it inside a solid steamer or bake pan, to catch any remaining hot water draining from product.

Sequence of Operation

The following “action-reaction” outline is provided to help the user understand how the equipment works.

When the operator starts up the kettle by turning the operating thermostat dial from “OFF” to a desired setting, the thermostat switch closes. This lets power flow to the heater element. When the temperature of the steam jacket reaches the value corresponding to the dial setting, the thermostat switch opens. This turns off the heating element. light and stops the heaters. As soon as the thermostat senses that the kettle is cooling below the set point, the thermostat switch closes and the heaters come on again. The heating element will cycle ON/OFF continually to maintain the kettle set temperature.

Every time the kettle is tilted, the tilt cut-off switch interrupts the power supply to the heaters, so that the heating elements will not operate while not submerged in the jacket water.

If steam pressure greater than 50 PSI is generated in the jacket, the safety valve will open and relieve the excess pressure.

In the event that the jacket water level gets too low and the heating elements overheat, the low water control will open and shut off power to the elements. Setting the operating thermostat dial to “OFF” shuts down all control and heating circuits.

Cleaning

1. Suggested Tools:

a. Cleaner, such as Klenzade HC-10 or HC-32 from ECOLAB, Inc.

b. Kettle brushes in good condition.

c. Sanitizer such as Klenzade XY-12.

d. Film remover such as Klenzade LC-30.

e. Stainless steel cleaner such as “Zepper” from “Zep Manufacturing Co.

NOTE: See “Reference” Section for information about purchasing these cleaners.

2. Precautions

Before cleaning, shut off the kettle by turning the thermostat dial to “OFF.” Shut off electric power to the unit at a remote switch, such as the circuit breaker.

WARNING
KEEP WATER AND SOLUTIONS AWAY FROM CONTROLS AND ELECTRICAL EQUIPMENT. NEVER SPRAY SUPPORT HOUSING OR ELECTRICAL CONNECTIONS.

CAUTION
MOST CLEANERS ARE HARMFUL TO THE SKIN, EYES, MUCOUS MEMBRANES, AND CLOTHING. PRECAUTIONS SHOULD BE TAKEN. WEAR RUBBER GLOVES, GOGGLES OR FACE SHIELD, AND PROTECTIVE CLOTHING. READ THE WARNINGS AND FOLLOW THE DIRECTIONS ON THE LABEL OF THE CLEANER CAREFULLY.

3. Procedure

a. Clean food-contact surfaces as soon as possible after use. If the unit is in continuous use, thoroughly clean and sanitize the interior and exterior at least once every 12 hours.

WARNING
AVOID ANY DIRECT CONTACT WITH HOT SURFACES. DIRECT SKIN CONTACT COULD RESULT IN SEVERE BURNS.

b. Scrape and flush out food residues. Be careful not to scratch the kettle with metal implements.

c. Prepare a hot solution of the detergent/ cleaning compound as instructed by the supplier. Clean the unit thoroughly. A cloth moistened with cleaning solution can be used to clean controls, housings, and electrical conduits.

d. Rinse the kettle thoroughly with hot water, then drain completely.

e. As part of the daily cleaning program, clean soiled external and internal surfaces. Remember to check the sides of the unit and control housing.

f. To remove stuck materials, use a brush, sponge, cloth, plastic or rubber scraper, or plastic wool with the cleaning solution. To reduce effort required in washing, let

Use a sponge, cloth or plastic brush to clean the kettle.

Scrapers or steel wool can harm the kettle surface.

the detergent solution sit in the kettle and soak into the residue. Do NOT use abrasive materials or metal tools that might scratch the surface. Scratches make the surface harder to clean and provide places for bacteria to grow.

Do NOT use steel wool, which may leave particles in the surface and cause eventual corrosion and pitting.

g. The outside of the unit may be polished with a stainless steel cleaner such as “Zepper” from Zep Manufacturing Co.

h. When equipment needs to be sanitized, use a solution equivalent to one that supplies 200 parts per million available chlorine. Obtain advice on sanitizing agents from your supplier of sanitizing products. Following the supplier’s instructions, apply the agent after the unit has been cleaned and drained. Rinse off the sanitizer thoroughly.

i. It is recommended that each piece of equipment be sanitized just before use.

j. If there is difficulty removing mineral deposits or a film left by hard water or food residues, clean the kettle thoroughly and use a deliming agent, like Groen Delimer/Descaler (Part Number 114800) or Lime-Away® from Ecolab, in accordance with the manufacturer’s directions. Rinse and drain the unit before further use.

k. If cleaning problems persist, contact your cleaning product representative for assistance. The supplier has a trained technical staff with laboratory facilities to serve you.

Maintenance

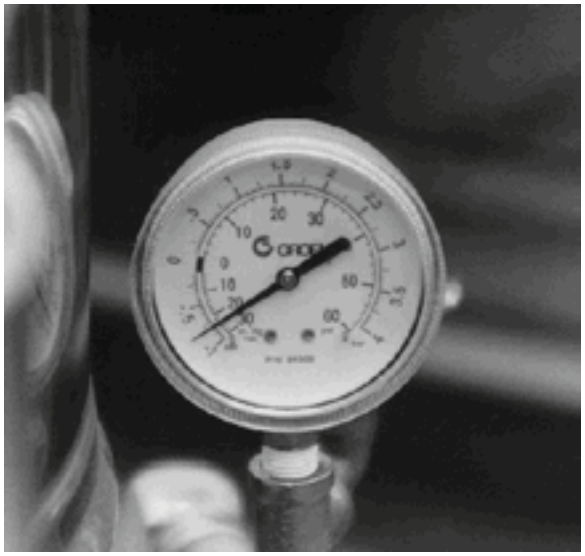
NOTICE: Contact Groen or an authorized Groen representative when repairs are required.

1. Periodic Maintenance

A Maintenance & Service Log is provided at the back of this manual with the warranty information. Each time maintenance is performed on your Groen kettle, enter the date on which the work was done, what was done, and who did it. Keep this manual on file and available for operators to use.

Periodic inspection will minimize equipment down time and increase efficiency of operation. Check the following points:

a. Check the pressure/vacuum gauge every day. The gauge should show a vacuum of 20 to 30 inches, when the kettle is cold. If



The pressure gauge should show a vacuum of 20 to 30 inches when the kettle is cold.

it does not, see "Jacket Vacuum" at right.

b. Also check jacket water level every day. It should be between the "minimum-maximum" marks on the gauge glass. If the level is low, see "Jacket Filling and Water Treatment" on page 13.

c. Ensure that wiring is securely connected and in good condition.

d. Keep the inside of the support housing clean.

e. Test the safety valve at least twice each month. Test the valve with the kettle operating at five PSI by lifting the test lever to release steam.

WARNING
WHEN TESTING, AVOID ANY EXPOSURE TO THE STEAM BLOWING OUT OF THE SAFETY VALVE. DIRECT CONTACT COULD RESULT IN SEVERE BURNS.

Then release the lever and let the valve snap shut. If the lever does not activate, or there is no evidence of discharge, or the valve leaks, immediately discontinue use of the kettle and contact a qualified Groen service representative.

2. Jacket Vacuum

When the kettle is cold, a positive pressure reading or a reading near zero on the pressure/vacuum gauge indicates air in the jacket. This slows down heating of the kettle.

To remove air:

a. Start the unit. (See the "Operation" section of this manual.)

b. When the pressure/vacuum gauge reaches a positive pressure reading of five PSI, release the entrapped air and steam by pulling up on the safety valve ring for about 1 second. Let the pull ring snap back into the closed position. Repeat this step immediately after the gauge again reads five PSI.

WARNING
AVOID ANY EXPOSURE TO THE STEAM BLOWING OUT OF THE SAFETY VALVE. DIRECT CONTACT COULD RESULT IN SEVERE BURNS.

3. Jacket Filling and Water Treatment

The jacket was charged at the factory with the proper amount of treated water. You may need to restore the water to its proper level, either because water was lost as steam during venting or because treated water was lost by draining.

a. If you are replacing water lost as steam, use distilled water. If you are replacing treated water that ran out of the jacket, prepare more treated water as directed in step 4, ìWater Treatment Procedure.î

CAUTION

BEFORE ATTEMPTING STEP [3b] VERIFY THAT THE PRESSURE GAUGE SHOWS ZERO OR A VACUUM. IF THE GAUGE SHOWS A READING HIGHER THAN ZERO PSIG, RELIEVE THE PRESSURE BY CAREFULLY PULLING THE SAFETY VALVE RING.

b. Allow the kettle to cool completely. Turn the elbow on the safety valve counterclockwise (to avoid thread damage) until the opening of the elbow faces upward.

c. Open the safety valve and pour the water or treated water in at the elbow until the water level rises to a point between the marks on the gauge glass.

CAUTION

BEFORE YOU HEAT THE KETTLE FOR ANY PURPOSE, TURN THE ELBOW CLOCKWISE UNTIL THE OPENING AGAIN FACES DOWNWARD.

d. Air introduced to the jacket during the filling operation must be removed to obtain efficient heating. See ìJacket Vacuumî on page 12.

4. Water Treatment Procedure

WARNING

TO AVOID INJURY, READ AND FOLLOW ALL PRECAUTIONS STATED ON THE LABEL OF THE WATER TREATMENT COMPOUND.

a. Place one quart of water in the mixing container. Distilled water is recommended.

b. Hang a strip of pH test paper on the rim of the container, with about 1 inch of the strip below the surface of the water.

c. Measure the water treatment compound (Groen part number 110324) you will be using. (One way to do this is to add the compound from a measuring cup.)

d. Stir the water continuously, while you slowly add water treatment compound, until the water reaches a pH between 10.5 and 11.5. Judge the pH by frequently comparing the color of the test strip with the color chart provided in the pH test kit. If you have difficult matching colors, use an electro-analytical device to check, or ask another person to help you.

e. Record the exact amounts of water and treatment compound used. These amounts may be used again, if the same sources of water and compound are employed to refill the jacket in the future. However, it is advisable to check the pH every time treated water is prepared.

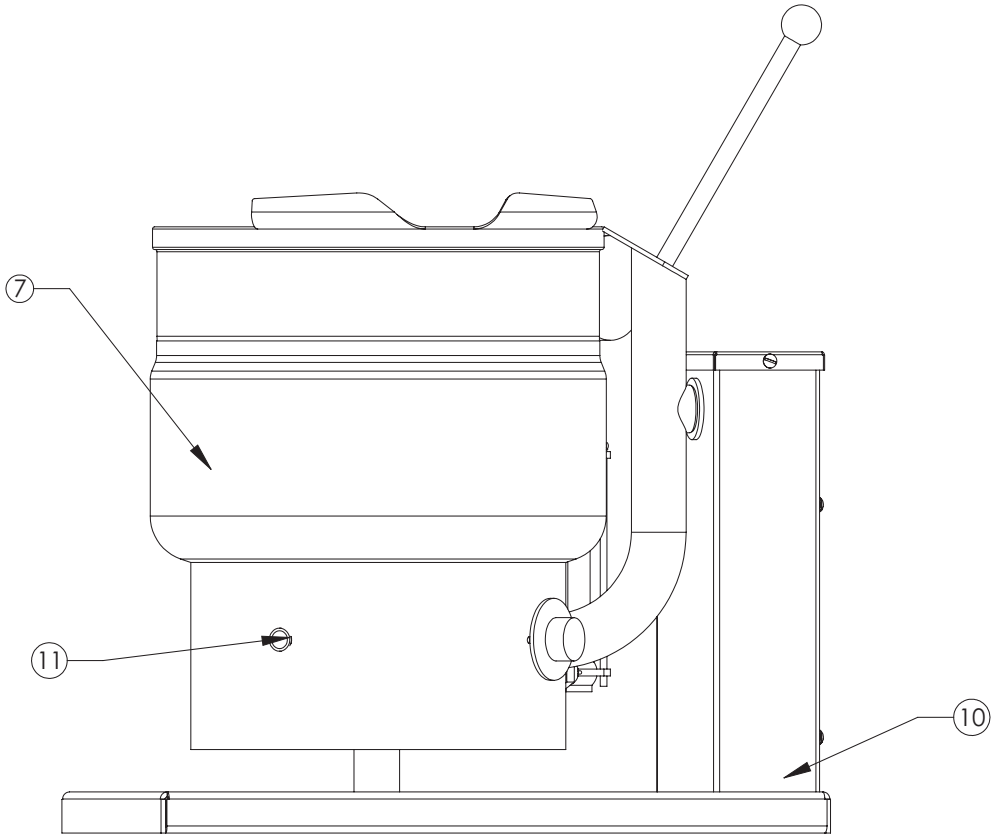
Troubleshooting

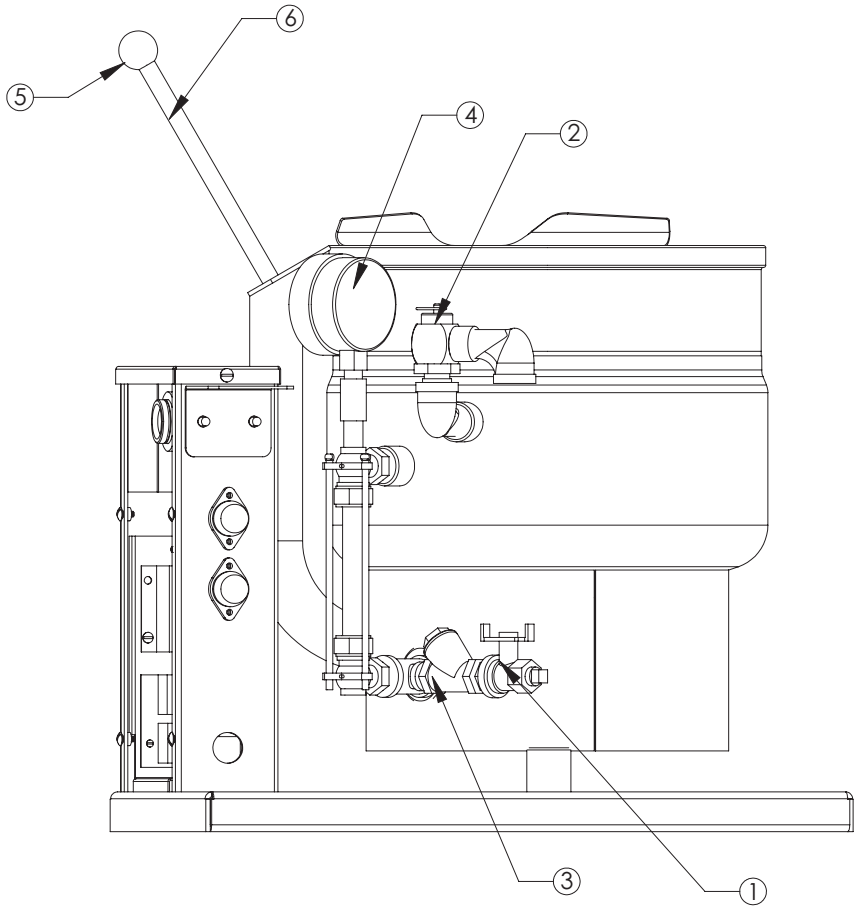
Your Groen kettle will operate smoothly and efficiently if properly maintained. However, the following is a list of checks to make in the event of a problem. Wiring diagrams are furnished inside the service panel. **Items marked with an ✘ should only be performed by a qualified Groen Service Representative.**

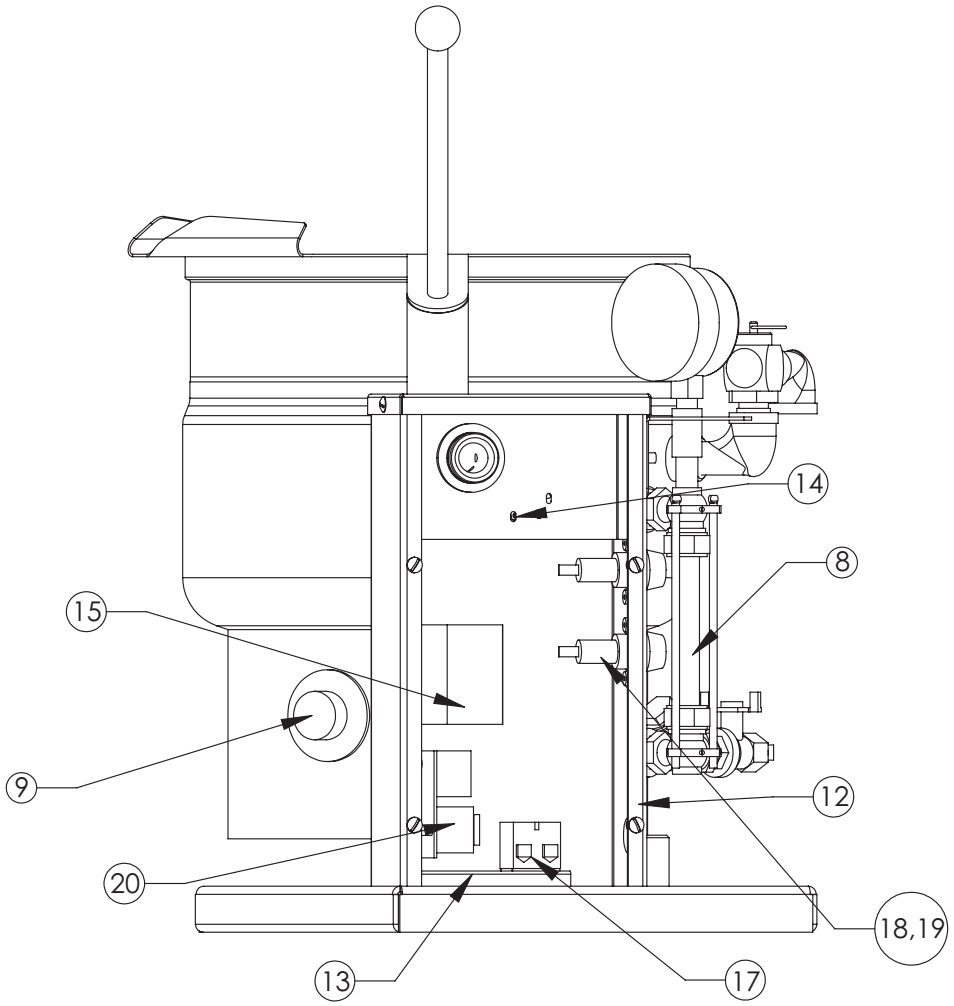
USE OF ANY REPLACEMENT PARTS OTHER THAN THOSE SUPPLIED BY GROEN OR THEIR AUTHORIZED DISTRIBUTORS CAN CAUSE INJURY TO THE OPERATOR AND DAMAGE TO THE EQUIPMENT AND WILL VOID ALL WARRANTIES.

SYMPTOM	WHO	WHAT TO CHECK Items marked with (✘) should only by done by a factory-authorized service rep.
Kettle will not heat, and heating indicator will not come on.	User	a. Electric power supply to the unit. b. Water level in jacket.
	Auth Service Rep. Only	c. Control circuit fuses. Replace a blown fuse only with a fuse of the same AMP rating. ✘ d. For loose or broken wires. ✘ e. Tilt cut-off switch. ✘ f. That pressure switch is open. ✘ g. Operation of variable thermostat. ✘ h. Low water cutoff. ✘
Kettle will not heat, but heating indicator comes on.	Auth Service Rep. Only	a. Contactor. ✘ b. Heater elements with ohmmeter for ground short or open element. If element is defective, call Groen. ✘
Kettle continues heating after it reaches the desired temperature	User	a. Thermostat dial setting.
	Auth Service Rep. Only	b. Thermostat circuit for short. ✘ c. Thermostat operation. The thermostat should click when the dial is rotated above and below the setting for the temperature of the kettle. ✘ d. Contactor, to determine whether it is energized or stuck. ✘
Kettle stops heating before it reaches the desired temperature.	User	a. Thermostat dial setting.
	Auth Service Rep. Only	b. Thermostat calibration. ✘ c. Thermostat operation. The thermostat should click when the dial is rotated above and below the setting for the temperature of the kettle. ✘ d. Pressure switch setting.✘
Kettle heats slowly	User	a. For air in the jacket. See “Jacket Vacuum” in the “Maintenance” section of this manual.
	Auth Service Rep. Only	b. Heater elements with ohmmeter for ground short or open element. If an element is defective, call Groen. ✘ c. Voltage of main power source. ✘
Safety valve pops.	User	a. For air in the jacket. See “Jacket Vacuum” in the “Maintenance” section of this manual.
	Auth Service Rep. Only	b. Pressure switch setting. ✘ c. Thermostat operation. Thermostat should click when the dial is rotated above and below the setting for the temperature of the kettle. ✘ d. Safety valve. If the valve pops at pressures below 49 PSI, replace it. ✘ e. Contactor, to determine whether it is de-energized. ✘

PARTS LIST – TDB/6-10



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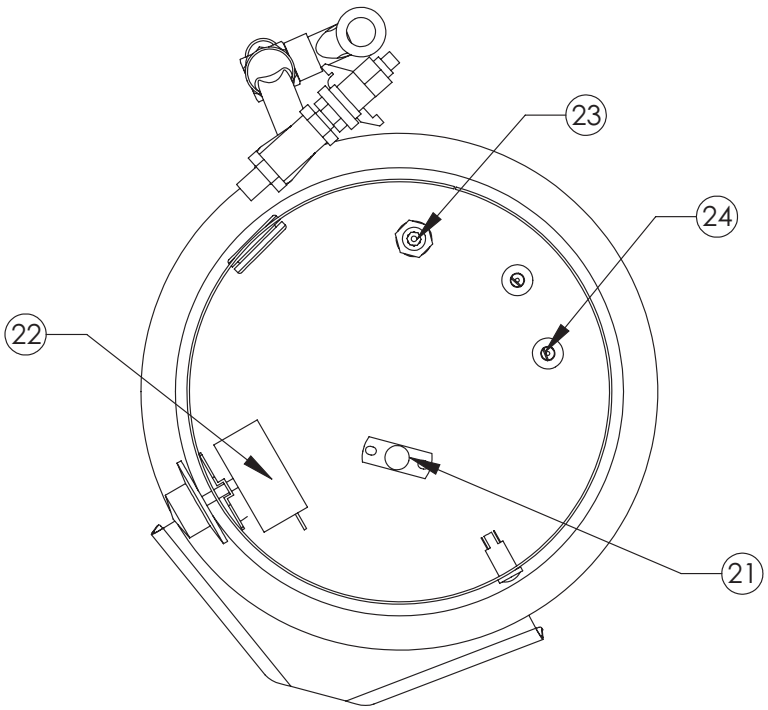
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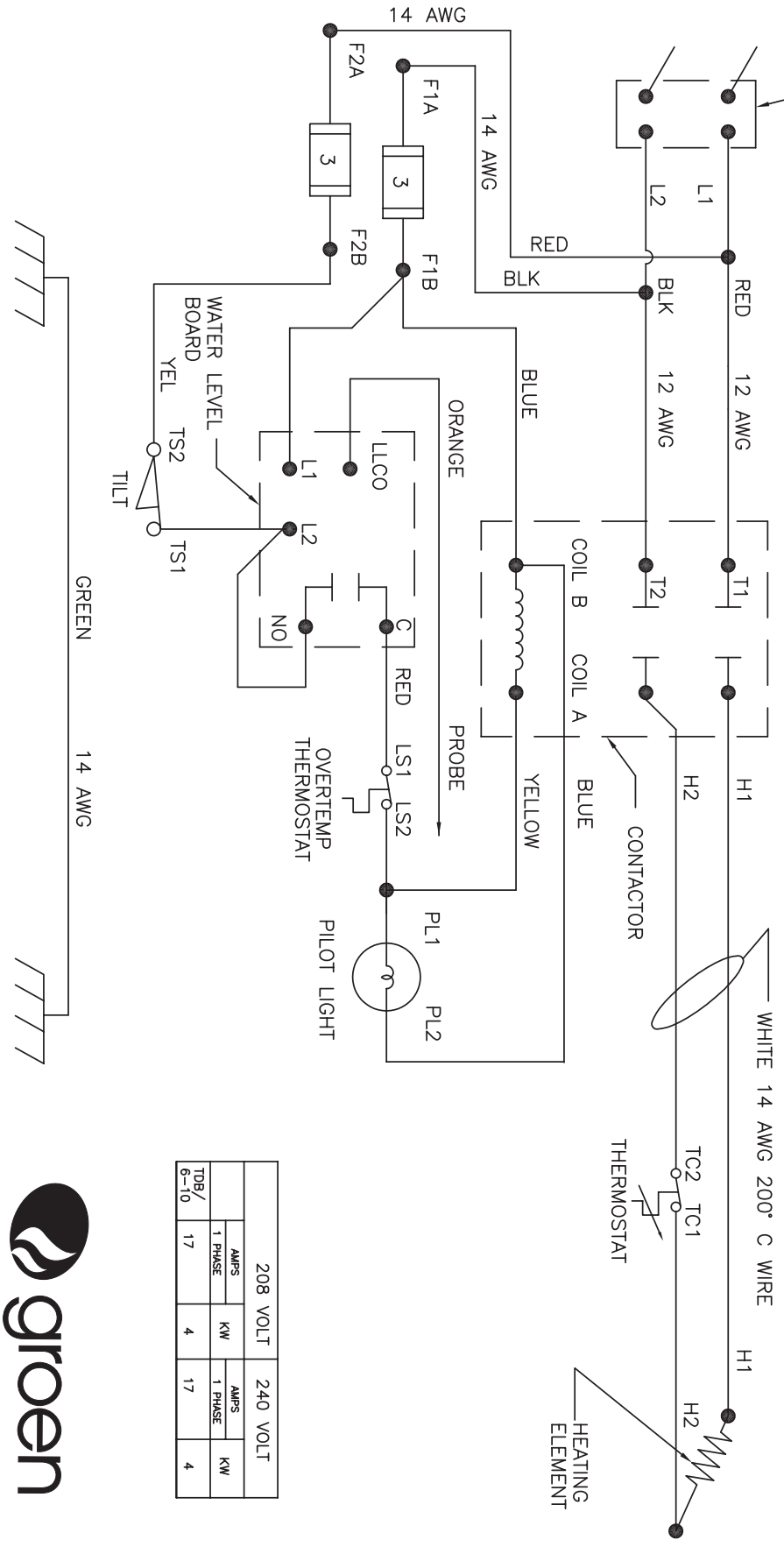
PARTS LIST – TDB/6-10

To order parts, contact your Groen Authorized Service Agent. Supply the model designation, serial number, part description, part number, quantity, and when applicable, voltage and phase.

Key	Description	Part No.
1	Water Fill Assembly	096914
2	Safety Valve	097005
3	Check Valve	096915
4	Pressure Gauge	084208
5	Knob	012691
6	Handle & Ball Knob Assembly	012695
7	Kettle Body Assembly	MS2978
8	Glass Water Level	008742
9	Knob Thermostat	002868
10	Base and Pedestal Assembly	131883
11	Light, Red	016028
12	Pedestal Weldment	096929
13	Electrical Mount Assembly	131887
14	Tilt Switch	002982
15	Contactor	009178
16	Ground Terminal	002863
17	Terminal Block	003887
18	Fuse Holder	002944
19	Fuse, 3 Amp	002945
20	Water Level Board	096925
21	Thermostat, High	004588
22	Thermostat	012313
23	Water Level Probe	096959
24	Element	011094
✘	Cover Element Housing	002915
✘	Cover, Side Pedestal	131982
✘	Cover, Top Pedestal	131886
✘	Overlay Operating Instructions	135735
✘	Harness, Wire	148534

✘ — Item not depicted/called out in drawing or photograph.

WIRING DIAGRAM – TDB/6-10E



TDB/ 6–10	208 VOLT		240 VOLT	
	AMPS 1 PHASE	KW	AMPS 1 PHASE	KW
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groen

P/N 148543 REV A

References

KLENZADE SALES CENTER
ECOLAB. Inc.
370 Wabasha
St. Paul, Minnesota 55102
800/352-5326 or 612/293-2233

NATIONAL FIRE PROTECTION ASSOCIATION
60 Battery March Park
Quincy, Massachusetts 02269

NFPA/70 The National Electrical Code

NSF INTERNATIONAL
789 N. Dixboro Rd.
P.O. Box 130140
Ann Arbor, Michigan 48113-0140

UNDERWRITERS LABORATORIES, INC.
333 Pfingsten Road
Northbrook, Illinois 60062

ZEP MANUFACTURING CO.
1310-T Seaboard Industrial Blvd.
Atlanta, Georgia 30318

Service Log

Model No. _____ Purchased From _____

Serial No. _____ Location _____

Date Purchased _____ Date Installed _____

Purchase Order No. _____ For Service Call _____

Date	Maintenance Performed	Performed by

Limited Warranty

To Commercial Purchasers *

(Domestic U.S., Hawaii & Canadian Sales Only)

Groen Foodservice Equipment ("Groen Equipment") has been skillfully manufactured, carefully inspected and packaged to meet rigid standards of excellence. Groen warrants its Equipment to be free from defects in material and workmanship for (12) twelve months with the following conditions and subject to the following limitations.

I. This parts and labor warranty is limited to Groen Equipment sold to the original commercial purchaser/users (but not original equipment manufacturers), at its original place of installation in the continental United States, Hawaii and Canada.

II. Damage during shipment is to be reported to the carrier, is not covered under this warranty, and is the sole responsibility of purchaser/user.

III. Groen, or an authorized service representative, will repair or replace, at Groen's sole election, any Groen Equipment, including but not limited to, drawoff valves, safety valves, gas and electric components, found to be defective during the warranty period. As to warranty service in the territory described above, Groen will absorb labor and portal to portal transportation costs (time & mileage) for the first twelve (12) months from date of installation or fifteen (15) months from date of shipment from Groen.

IV. This warranty does not cover boiler maintenance, calibration, periodic adjustments as specified in operating instructions or manuals, and consumable parts such as scraper blades, gaskets, packing, etc., or labor costs incurred for removal of adjacent equipment or objects to gain access to Groen Equipment. This warranty does not cover defects caused by improper installation, abuse, careless operation, or improper maintenance of equipment. This warranty does not cover damage caused by poor water quality or improper boiler maintenance.

V. **THIS WARRANTY IS EXCLUSIVE AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, EACH OF WHICH IS HEREBY EXPRESSLY DISCLAIMED. THE REMEDIES DESCRIBED ABOVE ARE EXCLUSIVE AND IN NO EVENT SHALL GROEN BE LIABLE FOR SPECIAL, CONSEQUENTIAL OR INCIDENTAL DAMAGES FOR THE BREACH OR DELAY IN PERFORMANCE OF THIS WARRANTY.**

VI. Groen Equipment is for commercial use only. If sold as a component of another (O.E.M.) manufacturer's equipment, or if used as a consumer product, such Equipment is sold AS IS and without any warranty.

*** (Covers All Foodservice Equipment Ordered After October 1, 1995)**

NOTES

NOTES

1055 Mendell Davis Drive • Jackson MS 39272
888-994-7636 • 601-372-3903 • Fax 888-864-7636
groen.com

PART NUMBER 148732, REV. E (9/09)